

**BEFORE THE STATE OF WASHINGTON
ENERGY FACILITY SITE EVALUATION COUNCIL**

IN RE APPLICATION NO. 99-1)	
2ND REVISED APPLICATION, JUNE 2001)	
)	EXHIBIT _____ (PGW-T)
SUMAS ENERGY 2 GENERATION)	
FACILITY)	

TESTIMONY OF

NW ENERGY COALITION AND WASHINGTON ENVIRONMENTAL COUNCIL

WITNESS: PETER G. WEST

1 **I. INTRODUCTION**

2 **Q. Please state your name, address and affiliation.**

3 R. I am Peter West, Assistant Director of the Renewable Northwest Project (RNP) located at 917
4 SW Oak #303, Portland, Oregon 97205. RNP is a Northwest regional group promoting clean
5 air policies, renewable energy and climate change solutions.

6 **Q. You were an expert witness for the NW Energy Coalition and Washington Environmental**
7 **Council in the first round of adjudicated proceedings regarding this application. Please**
8 **remind the Council of your qualifications.**

9 R. As Assistant Director of RNP, I develop and implement policy and market initiatives for
10 sustainable energy and climate change; I advocate for wind, geothermal and solar energy; I
11 educate policy makers, build constituencies and develop collaborative efforts with
12 environmental organizations, industry groups and governments; I develop and negotiate
13 legislation and programs for renewable resources; I provide technical expertise on resource
14 evaluation, power facility siting and economics; and I organize on issues related to clean
15 air, global warming and utility industry restructuring and regulatory change.

16 I was the co-founder and first Chair of the Board of the Oregon Climate Trust, an
17 organization developing global warming mitigation measures and educational projects. I
18 currently am a member of that board. I was one of the founding members of the Oregon
19 Rivers Council (now Pacific Rivers Council), where I helped ensure protection of more
20 than 40 rivers in Oregon. I also serve on the board of the Oregon League of Conservation
21 Voters.

1 Before Renewable Northwest Project, I was a Supervisory Regional Economist for
2 Bonneville Power, overseeing economic and electrical demand forecasting. Prior to
3 working at Bonneville Power, I held positions as a Resource Economist for Oregon State
4 University.

5 I have a graduate degree in Agriculture and Resource Economics from Oregon State University
6 and a bachelors of science degree from the University of Maine.

7 **Q. What will your testimony show?**

8 R. The testimony to follow will show that predominant opinion continues to favor immediate
9 action to address climate change; the current and former monetary rates for mitigation of carbon
10 dioxide (CO₂) emissions in Oregon do not reflect today's actual costs of mitigation projects;
11 mitigation at the current price of the Oregon standard is affordable; and it is important to pick an
12 organization with experience in CO₂ offsets and recognized standards for evaluating and
13 selecting projects. Further, this testimony will show that the costs of acquiring levels of
14 mitigation that better approach full offset are quite small.

15 **II. UPDATES ON CLIMATE CHANGE AND THE CRITICAL NEED FOR MITIGATION**

16 **Q. Has the consensus of opinion on climate change shifted?**

17 R. No. The predominant economic and scientific opinion continues to recognize the reality of
18 global climate change. Immediate action is critical to reduce and offset emissions that
19 contribute to global warming. In May 2001, President Bush asked the National Academy of
20 Sciences (NAS) to review the science of global warming (see Attachment PGW-1). In its
21 response, the NAS confirmed the conclusions of the Intergovernmental Panel on Climate
22 Change that human-caused global warming is occurring (see Attachment PGW-2). They note

1 that confidence in these conclusions is even stronger than before and that risks increase with
2 both the rate of climate change and the magnitude of warming. They do not directly answer the
3 question of whether there is a “safe” level of climate change because that involves a value
4 judgement of what are acceptable risks to human welfare and ecosystems.

5 **S. Are there new initiatives in CO2 mitigation since you provided testimony in this**
6 **proceeding in August 2000?**

7 T. Yes. According to a summary report from the Center for Clean Air Policy (see Attachment
8 PGW-3), there are several new state and provincial initiatives that go beyond the significant
9 government and business efforts listed in Ms. Hirsh’s testimony from last year (Exh. 120, ps. 7-
10 9). Massachusetts’ Energy Facility Siting Council requires new generation projects to partially
11 offset their annual CO2 emissions and has proposed standards for the dirtiest existing plants.
12 The New England states and the Eastern Canadian provinces have created a joint initiative to
13 address climate change. California, New Hampshire, New Jersey and Wisconsin have
14 established registries to record early action efforts to reduce CO2 emissions. BC Hydro has
15 issued a Request for Proposals (RFP) to fund offset projects in Canada.¹ And the Oregon
16 Legislature passed a new law (HB 2200) directing the Department of Forestry to create
17 standards for acceptable CO2 sequestration projects and serve as a voluntary aggregator and
18 broker for in-state forest sequestration projects.

¹ Information received via verbal communication with Kris Nelson at The Climate Trust.

1 U. **If permitted, would the Sumas Energy 2 project be a new source of greenhouse gas**
2 **emissions?**

3 R. Yes. The plant could emit as much as 2.42 million tons of CO2 per year (Exh. 204, p. 3.1-5).
4 The proposed Sumas 2 plant, alone, represents 6% of the amount of CO2 anticipated from all
5 proposed power plants in the Northwest (Exh. 204, p. 3.1-2).

6 **III. MODIFICATIONS TO OREGON'S CO2 STANDARD**

7 **Q. Please refresh our memory about the basics of Oregon's CO2 standard.**

8 R. Oregon's law, enacted in 1997, requires all new energy facilities regulated by the state to
9 meet a net emissions standard for CO2 gases. According to current rules, natural gas
10 power plants must mitigate emissions greater than 0.675 pounds of CO2 per kilowatt
11 hour (kWh). This is 17% lower than the CO2 emissions of the most efficient such plant
12 currently operating in the U.S. A developer can meet the standard through plant
13 efficiency, cogeneration, and other offsets. The law also establishes a monetary path,
14 allowing a developer to pay a deemed amount per ton of CO2 offset. Finally, the law sets
15 criteria for creation of an independent, nonprofit organization to administer the monetary
16 path. The Climate Trust in Portland, Oregon was created to perform this function.

17 **Q. Have Oregon's CO2 rules changed since you last testified before Washington's Energy**
18 **Facility Site Evaluation Council (EFSEC) regarding the proposed Sumas Energy 2**
19 **facility?**

20 R. Yes. The offset rate for the monetary path was raised from 57 cents per ton to 85 cents per ton.
21 The decision to raise the rate was based in part on testimony from The Climate Trust showing
22 that actual costs of CO2 offsets averaged \$1.27 per short ton in its first competitive solicitation,

1 and the average rate in the current second round of competitive solicitations is \$1.88 per short
2 ton based on numbers in the submitted proposals² (see Attachment PGW-4). Neither of these
3 averages include administrative costs associated with project selection and contracting. Oregon
4

² Note that this average cost is based on the current pool of potential projects being examined by The Climate Trust. This number will change as the Trust completes its detailed review of the proposals, further negotiates with project proponents, and actually selects a set of final projects to fund.

1 Office of Energy Staff provided supporting evidence for these values, noting that a
2 representative sample of projects done by others had an average cost of \$3.74 per ton (see
3 Attachment PGW-5). It is important to note that the law constrains Oregon's Energy Facility
4 Siting Council (EFSC) from raising the rate by more than 50% during any two-year period.
5 Even if the real average cost per ton of emissions mitigation projects stayed constant, it would
6 take several years for Oregon's standard to reflect those true costs.

7 **Q. Did Oregon's EFSC consider competitiveness in changing the rate?**

8 R. The law allows for changes in the rate per ton but requires EFSC, among other things, to
9 determine if these changes are economically achievable. Staff analysis indicates the higher rate
10 would change the net present value of total construction and operating costs by 0.1 percent.
11 EFSC concluded that one-tenth of one percent in additional costs would not discourage a
12 developer from locating in Oregon.

13 **Q, Is the new rate adequate?**

14 R. No. As noted above, there is a disconnect between the deemed rate (now 85 cents per ton) and
15 actual costs to acquire offsets. The law enables adjustments to be made over time and parties
16 recognized there would be a necessary lag. The original rate was based on experience in the
17 mid-1990's. Costs for offsets have increased significantly. While 85 cents/ton is an
18 improvement, it is approximately half the rate for offsets proposed in The Climate Trust's
19 second round of solicitations.

IV. UPDATES FROM THE CLIMATE TRUST

Q. What significant activities has The Climate Trust been engaged in since you last testified in this proceeding?

R. The Trust selected five projects from its first round of competitive solicitations after conducting a detailed review of 40 projects; the five projects fall within the categories of energy efficiency, renewable energy and permanent forest sequestration. The Trust also issued a second RFP for \$5.5 million in offset projects this summer. Evaluation and selection are in progress, with 15 projects being seriously considered. In addition, The Trust has contracted to acquire at least 240,000 tons of CO2 offsets for Seattle City Light. The new Umatilla power plant to be built in Oregon will be making its payment to the Oregon Climate Trust soon. The applicant's funding for CO2 mitigation could be added to this to give more economies of scale in acquiring projects.

Q. What CO2 mitigation or offset projects has The Climate Trust pursued in Washington?

R. They are funding two projects completely in Washington and funding a third that will operate in both Oregon and Washington. These were acquired competitively through last year's Climate Trust RFP process for offset projects.

Q. What has the Trust learned that may be useful in this proceeding?

R. A few things can be said in summary:

- An RFP is very useful to getting the best competitive prices and broadest selection.
- Evaluation criteria are essential to determining credible and reliable offsets.
- What appears cheap is often not the case.
- Responses are robust and credible projects exist on all continents.
- Domestic projects are competitive with international projects.

- Washington has a good, solid base of projects worth funding. While local projects may be more expensive than others, a broad portfolio of projects can offset extra costs and enable the region to achieve co-benefits from local investments.

V. THE APPLICANT'S PROPOSAL

Q. What is your understanding of the applicant's proposal with regard to mitigation of greenhouse gas emissions?

R. The applicant proposes to build a natural gas power plant that will emit up to 2.42 million tons of CO₂ per year (Exh. 204, p. 3.1-5). The applicant proposes that mitigation expenditures for these emissions be based on the Oregon CO₂ standard (Oregon Administrative Rules Chapter 345, division 24) and be directed to the Climate Trust for project selection and development (2nd Revised Application, page 2.11-11). The applicant proposes one exception to Oregon's standard, i.e., payment in five equal annual installments rather than one upfront lump sum. Subsequent testimony by Charles Martin contends the fund directed to such offsets be calculated at the former rate of 57 cents per ton (Exh. 180, p. 20, ls. 27-35). Further, Mr. Martin suggests the Council consider direct funding of projects (Exh. 180, ps. 21-22).

S. Does the applicant correctly interpret the Oregon law that created the CO₂ standard?

T. In testimony, the applicant appears to refer to the deemed rate per ton for offsets as the complete value for calculating total costs to fund mitigation programs (Exh. 180, p. 20, ls. 27-35; Exh. 180, p. 23, ls. 1-15). In addition to the rate per ton set by Oregon EFSC, initially 57 cents and now 85 cents, the law requires the developer to pay an administrative fee to cover costs for contracting and selecting. The fee is roughly an extra 5 percent of total payments. The administrative fee is an essential part of the overall requirement in the Oregon standard.

1 **U. Does following the Oregon standard mean including additional administrative costs?**

2 V. Absolutely. If the applicant were to fund mitigation at the former rate of \$0.57/ton, the
3 additional cost for contracting and selection would total \$400,000 to \$600,000. The estimated
4 \$8.4 million for offsets cited in the DSEIS (Exh. 204, p. 3.1-5) includes about \$402,000 in
5 administrative costs. This adjusted figure is within the range of the figure I calculated in my
6 previous testimony (Exh. 121, p. 15, ls. 4-5). The Climate Trust notes that contracting and
7 selection costs appear to be running close to 10%, twice the level currently charged. If the full
8 administrative costs of the Climate Trust are included, the offset costs would be about \$8.8
9 million. Not including administrative costs would directly translate into less money going
10 directly to projects and less CO2 offsets actually being acquired.

11 **W. You mentioned that subsequent testimony from the applicant suggests calculating the**
12 **mitigation requirement at the former rate of \$0.57/ton of CO2. Under Oregon's current**
13 **standard, what offset rate should be applied to the proposed facility and how much would**
14 **the applicant pay?**

15 X. Partial mitigation of CO2 emissions at the revised Oregon standard of 85 cents per ton would
16 translate into roughly a fund of \$12.6 million, including administrative fees (assuming a 30 year
17 life; 100% capacity factor; 470,000 tons CO2/year (Exh. 204, p. 3.1-5); and an extra 5% fee for
18 administration). Given current actual acquisition costs closer to \$2/ton, this amount would
19 mitigate only about 9% of the CO2 emissions from the proposed facility, if costs held steady.
20 Because costs for projects are rising, the five-year payment schedule proposed by the applicant
21 would end up decreasing the actual amount of offsets even further – unless future payments are

adjusted to track changing costs. Overall, though, this translates into a cost to the applicant of approximately \$0.00037/kWh - less than four one-hundredths of one cent per kWh.

Y. You also mentioned that the applicant suggests the Council consider direct funding of projects instead of submitting funds to The Climate Trust. Does the applicant provide appropriate criteria to evaluate potential projects that should be directly funded?

R. No. As I discussed in my testimony during the first round of hearings in this proceeding (Exh. 121, ps. 18-19), seven factors must be examined to correctly evaluate CO2 mitigation projects, quantify the offsets and know how reliable the offsets can be:

- **Additionality:** the extent to which the effort would happen anyway and whether investment in the project makes a quantifiable difference.
- **Comparative baseline:** what the project is being compared to in terms of background rates of emissions and ongoing energy, forestry and other regulations. The reference case is necessary in order to know underlying assumptions, uncertainties, and leakages.
- **Leakage:** the extent to which external events can affect the amount of CO2 captured or offset.
- **Timing:** when the CO2 is removed or kept from the atmosphere. CO2 removed in the near term has less chance to do harm than CO2 that is not removed for 20 years or more.
- **Uncertainties:** the range around the values assumed to calculate the CO2 benefits. There needs to be a calculation of the expected value and the range around this. The price per ton is highly affected by the ranges around the calculations.
- **Monitoring:** the extent to which the project has ongoing reporting, controls and evaluation. Verifying the actual amount of CO2 offset is critical.

- 1 • Legal right: the extent to which the project developer can actually lay claim to the CO2
2 offsets and its willingness to transfer legal claim to project funders.

3 **Q. Should the Council apply these standards to SE2's mitigation plan?**

4 R. Yes. These are the most widely accepted evaluation criteria. They have been tested and
5 applied. These criteria should be coupled with a competitive selection process to ensure that all
6 good ideas are equally considered and that the state is getting the best value for the offset
7 funding.

8 **Q. Mr. Martin's testimony refers to the potential for a large-scale pilot project to examine**
9 **carbon sequestration from hybrid trees (Exh. 180, p. 21, ls. 7-31). Would planting fast**
10 **growing poplars constitute an appropriate CO2 emissions mitigation project?**

11 R. One can't tell until a proposed project is judged against a fair set of criteria and costs are known.
12 Such programs are controversial and estimates of their offset values vary widely. If EFSEC
13 recommends a permit for the proposed facility and postpones deciding an appropriate recipient
14 of CO2 mitigation funds from the applicant, I strongly recommend that the Council at a
15 minimum use the criteria I have presented to guide selection of suitable projects.

16 **Q. Mr. Martin's testimony also refers to an interest by Climate Solutions of Olympia in**
17 **a large-scale hybrid tree carbon sequestration pilot project (Exh. 180, p. 21, ls. 25-**
18 **31). What do you know about this?**

19 R. According to communications with Climate Solutions, that organization has not
20 advocated this type of large-scale demonstration project. The organization sees potential
21 in sequestration but also recognizes that the devil is in the details and the matter requires
22 significant study and discussion.

1 **Q. What do you recommend for a mitigation program?**

2 R. I recommend that mitigation be done as a series of projects that form a portfolio of actions that
3 (1) are evaluated using the criteria above; (2) deliver credible, actual CO2 reductions; and (3)
4 work in concert to ensure a balancing of return. The program should be designed, built and
5 directed by a group with independent expertise in CO2 mitigation projects. Examples of such
6 groups are Portland-based Trexler and Associates and The Climate Trust. The process to select
7 projects should be open and competitive. The focus of the program needs to be on the delivery
8 of results, not spending money.

9 **Q. Can you describe what Trexler and Associates does?**

10 R. They have broad and deep expertise in developing greenhouse gas emissions offset
11 projects and selecting and contracting projects for others. They work nationally and
12 internationally as contractors. They regularly conduct evaluation efforts for and advise
13 the Climate Trust. Their accomplishments in the CO2 mitigation field are numerous.

14 **S. Would other groups be able to do as good a job as The Climate Trust or Trexler and**
15 **Associates?**

16 R. Possibly they could. But there would be a steep learning curve and we would be ignoring
17 the benefits of significant regional experience. The Climate Trust has been able to
18 acquire offsets at an average price well below others. They are in partnership with the
19 City of Seattle and have created a broader partnership program to include businesses and
20 other states. Their executive director has indicated a strong willingness to create a
21 Washington steering committee to oversee any selection process based on funds from this
22 applicant or other developers of power plants in Washington. Trexler and Associates

1 could be hired as a contractor to the Council, and directed to administer the fund and
2 apply the suggested criteria in a competitive selection process. I would strongly
3 recommend going with an experienced group with a proven record, in addition to
4 following the criteria for selecting projects I outlined earlier. Interested other parties
5 could and should be part of a Washington steering committee.

6 VI. IMPACTS OF FULL CO2 MITIGATION

7 **Q. What would it cost under the Oregon standard to mitigate or offset all of the CO2 the**
8 **proposed facility would emit?**

9 R. If the applicant fully mitigated the proposed facility's CO2 emissions at its originally assumed
10 production level (82.4%), it would spend about \$53 million at 85 cents per ton plus the 5%
11 administrative fees. The net effect on costs for full mitigation at originally assumed production
12 levels would be \$0.0016/kWh, or less than two-tenths of one cent per kWh. Assuming a 100%
13 capacity factor, the total would be closer to \$65M.

14 **Q. Given your experience with acquisition of CO2 mitigation and offsets, do you think that 85**
15 **cents per ton of CO2 is a realistic cost today? If not, what is a more realistic estimate?**

16 R. As I mentioned, the most recent experience of The Climate Trust suggests expected actual costs
17 for mitigation projects are closer to \$1.88/ton for 2001. This is in line with my previous
18 testimony about where costs appeared to be heading (Exh. 121, p. 16, ls. 17-20). Oregon Office
19 of Energy data indicate that this is a low value and could be twice that level. Compared to real
20 costs, the Oregon standard is a very good deal for a developer. The effective cost for an
21 applicant directly investing in CO2 emissions mitigation projects is approximately twice as high
22 as one pursuing the monetary path. It is also important to remember that the Oregon standard is

yielding emissions reductions closer to 11% as opposed to the targeted 17% because of the monetary path's artificially low price per ton.

Q. Given actual costs of CO2 mitigation projects, how would you revise your estimates for how much it would cost the applicant to fully mitigate or offset the CO2 emissions from the proposed facility?

R. Paying actual costs for offsets would increase the cost for full mitigation to \$118 million (assuming \$1.88/ton; 2.42 MTY CO2; 30-year facility life; applicant's estimated 82.4% production rate; 5% administrative fee; and payment upfront). This assumes the applicant acts relatively soon to capture projects on the lower end of the cost curve and the plant is operated as claimed by the applicant. The net effect of this is still a relatively small price impact – shifting costs \$0.00346/kWh, or about three-tenths of a cent per kWh.

VII. ENERGY DISPLACEMENT

Q. Do CO2 standards on natural gas plants create incentives to build more coal plants?

R. I am not aware of any evidence to support such a claim. In his testimony for the applicant (Exh. 192, ps. 16-18), David Montgomery postulates that requiring offsets for new gas power plants will yield higher emissions by leading to new coal development. If this were true, we should see some evidence of it in recent experience. New coal facilities and expansions face, among other issues, significant location, land-use, air emissions and environmental hurdles as well as public resistance that strongly drive the market to other sources in the Northwest. Since the enactment of Oregon's CO2 standard in 1997, four new gas plants have been sited in Oregon and required to meet the CO2 offset requirements (Klamath Cogeneration, Coyote Springs 2, Hermiston Power Project, and the Umatilla Generating Plant), along with one pumping facility

1 for natural gas storage. At least another five gas-fired power plants are in various stages of the
2 Oregon siting process and all fall under the state's CO2 requirements. Oregon has a single
3 existing coal plant in Boardman. No new coal-fired facilities have been proposed in Oregon and
4 I am not aware of any proposals to expand Oregon's existing coal facility. In Idaho, the
5 Rathdrum 2 gas power plant is expected to commence operations this fall, and at least five other
6 new gas-fired facilities are in various stages of the permitting process. In Montana, a notice of
7 intent has been filed to develop a 500 MW natural gas power plant, and a 100 MW coal
8 gasification plant is under consideration. In Washington, at least seven gas-fired plants have
9 been seriously proposed and are engaged in local or state permitting processes, and at least two
10 are currently under construction. Washington has a single existing coal plant in Centralia, but
11 again I am not aware of any plans for expansion of that facility, Only one potential new coal
12 plant has been mentioned in Washington, the so-called 249 MW "clean coal" facility in Blaine.
13 If there was a bias to coal, we should expect to be seeing far more than two proposals for
14 relatively small coal plants. If Oregon's CO2 standards created a competitive disadvantage,
15 then development in Oregon should not be as robust as it has been.

16 **Q. Are there other types of electric power facilities being proposed in the Pacific Northwest?**

17 R. Yes. Seven new wind projects and one landfill gas expansion are underway. Another seven
18 wind projects and one geothermal project have been proposed. Seven of the fourteen wind
19 projects are in Washington. Four plants are expected on line within a year. So far, all
20 completed power facilities in the Northwest since 1997 are either natural gas or wind powered.

1 **Q. In his testimony for the applicant (Exh. 192, p. 8, ls. 36-40), Mr. Montgomery states his**
2 **preference to wait for a global strategy for addressing greenhouse gas emissions before**
3 **implementing programs at the national or local levels. What is your response?**

4 R. I don't agree with his perspective. I have heard similar arguments in other forums. For
5 example, while the Governor's Task Force on Energy Facility Siting considered CO2 mitigation
6 in 1996 and the Oregon Legislature considered a bill for a state CO2 standard in 1997, some
7 parties voiced similar opinions. The Task Force and the Legislature did not find those views
8 compelling enough to forego moving forward with a state standard. In its final order in the
9 Chehalis proceeding, EFSEC affirmed its desire to act locally:

10 Although the impacts may be global, the emissions that cause the impacts are identifiable,
11 quantifiable, and local, and the impacts are felt locally. We can act locally. While it would
12 be preferable to have national and state standards, mitigation of greenhouse gas emissions
13 must start somewhere and the Council has the authority to address these impacts now.
14 (Order 753, p. 27)

15 **VIII. CONCLUSION**

16
17 **Q. Please summarize your testimony.**

18 R. The testimony above shows that meeting CO2 standards does not harm natural gas plants or bias
19 the choice of new generation. My testimony also shows that meeting the revised Oregon
20 standard has limited cost impacts. Complete mitigation is preferable, economically achievable
21 and well within the range of competitiveness. It is important to select a qualified organization
22 to direct offset funding and project acquisition and focus on building a portfolio of projects in a
23 measured way. It would be best to leverage and lean on proven regional experience; use
24 competitive acquisition techniques; and base judgements on a clear, tested set of criteria.

25 **Q. Does this conclude your testimony?**

1 R. Yes.

2

END OF TESTIMONY

I declare under penalty of perjury that the above testimony is true and correct to the best of my knowledge.

DATED: September 28, 2001

By:_____

Peter West